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PATENT APPLICATION

GROUP 23 Attorney Docket No. 51288

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Dieter ELSÄSSER et al.)
Serial No.: 07/653,100)
Filed: February 8, 1991)
For: DISK STORAGE DRIVE)
Group Art Unit: 233)
Examiner: A. J. Heinz)

I hereby certify that this paper is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on this date.

2/3/92
Date

Registration No. 25,939
Attorney for Applicant(s)

AMENDMENT A

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

The following amendments and remarks are made in response to the outstanding Office Action dated August 5, 1991 in the above-identified patent application, the response time thereto being extended by the attached Petition for Extension of Time to and including February 5, 1992. Reexamination and reconsideration of this application in view of the following amendments and remarks are respectfully requested.

IN THE SPECIFICATION:

Page 3, line 29, delete "copending".

Page 3, line 30, change the entire line to read

--U.S. Patent 4,779,165, issued October 18, 1988,--.

IN THE CLAIMS:

Please amend the claims as follows:

CM Claim 1. (Twice Amended) A disk memory drive comprising: a brushless drive motor having an internal space defined therein and a stator including winding means defining magnetically active parts of the drive motor and having a given axial extension, the motor having an outer rotor with an inner circumference, an outer circumference and an open end coaxially encircling the stator and a substantially cylindrical air gap defined between the stator and the rotor, the rotor including a separate non ferromagnetic hub and a soft iron ring element interiorly of said hub and radially located means forming a permanent magnet interiorly of said ring having a predetermined axial extension fixedly connected therewith for magnetic interaction with said winding means; a disk mounting section provided on the outside of said hub for accommodating at least one storage disk for location in a clean chamber surrounding said rotor when the drive motor is mounted for operation, the disk mounting section on the hub along its axial length being adapted to extend through a central aperture of the storage disk, the winding means and the magnet means interacting therewith being disposed for at least half of the axial extension thereof within a space surrounded by the disk mounting section of the hub; and first and second axially separated bearing means having inner and outer races on a [stationary] shaft rotatably mounting the rotor and the hub on the shaft, the motor also including rotating means interacting with stationary means for

C¹
determining the rotational position of the rotor, the internal space of said motor, which includes the internal portions thereof with the bearing means, being sealed off against the clean chamber when the drive motor is mounted for operation, a disk-shaped ring member being located with precision at the open end of the rotor between the inner circumference of the rotor and the outer race of one of the axially separated bearing means, and means stationary containing leads establishing electrical connection between the internal space and the outside of the motor.

Claim 2. ~~(Once Amended)~~ A disk memory drive according to Claim 1, wherein [the] said rotating means interacting with said stationary means comprises rotational position indicator means which includes permanent magnet poles disposed on the disk-shaped ring member for rotation therewith and wherein the rotational position sensor means is sensitive to magnetic fields and interacts with the permanent magnet poles.

N
P
Z
K
Claim 3, line 2, change "1" to --19--.

Claim 6, line 2, change "1" to --19--.

Claim 7, line 2, change "1" to --2--.

Claim 8, line 2, change "1" to --2--.

Claim 9, line 2, delete "wherein".

C²
Claim ¹³~~12~~. (Twice Amended) A disk memory drive having a brushless drive motor, comprising a stator having a predetermined axial extension, a coaxially positioned outer rotor encircling the stator and defining therebetween a substantially cylindrical air gap, the rotor having an inner

circumference and an outer circumference and a predetermined axial extension, a cylindrically shaped permanent magnet having a predetermined axial extension disposed adjacent the air gap on the inner circumference of the rotor to rotate therewith and magnetically interact with the stator, a ferromagnetic hub on the outer circumference of the rotor firmly fixed to the motor magnet, the hub radially surrounding the predetermined axial extension of said permanent magnet and being provided on its outer circumference with a disk mounting section which can extend through the central opening in a storage disk to mount at least one storage disk thereon, a ~~[stationary]~~ shaft having first and second axially separated bearing means mounted thereon rotatably mounting the rotor with hub on the shaft, and seals located axially outside of the axial extension of the first and second bearing means for sealing the space therebetween.

Claim 13, line 2, change "Claim 12" to --Claim 20--.

Claim 14, line 2, change "Claim 12" to --Claim 20--.

Claim 15, line 2, change "Claim 12" to --Claim 20--.

Claim 16, line 2, change "Claim 14" to --Claim 20--.

Claim 17, line 2, change "Claim 14" to --Claim 16--.

Claim 18, line 2, change "Claim 14" to --Claim 16--.

Please add the following new claims:

³
Claim 19. A disk memory drive according to Claim 2, wherein the shaft is a stationary shaft.

¹⁴
Claim 20. A disk memory drive according to ¹³ Claim 12, wherein the shaft is a stationary shaft.

R E M A R K S

Claims 1-20 are now in the case, Claims 1 and 12, the independent claims, being amended to more clearly set forth what Applicant regards as the invention, and the dependent claims being amended to establish consistency with the new dependencies resulting from the amendments in Claims 1 and 12. New Claims 19 and 30 reintroduce in dependent claims the subject matter deleted from both Claims 1 and 12.

The Examiner has rejected original Claims 1-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-18 of U.S. Patent No. 5,001,581. Under the provisions stated in MPEP §804.02, "Terminal Disclaimer Avoiding Double Patenting Rejection", we separately enclose herewith TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION, signed by Günter H. Papst, Geschäftsführer of the assignee. It is believed, therefore, that the Examiner's rejection of these claims has been overcome.

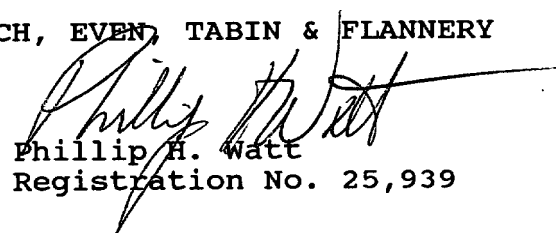
Note has been taken of the notice re patent drawings, PTO 948, and corrected formal drawings will be provided at the appropriate time.

In view of the foregoing, it is believed that the application is in condition for allowance, and early allowance is earnestly solicited.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

By


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February 3, 1992

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